

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

**APPLICANTS:** David E. Hill et al

**DOCKET NO :** 1266.1

**SERIAL NO.:**

**ART UNIT:**

**FILED:**

**EXAMINER:**

**TITLE:** Freeze Resistant Buoy System

**INFORMATION DISCLOSURE STATEMENT under 37 CFR 1.56 and 1.97**

Commissioner for Patents  
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Alexandria, VA 22313-1450

Sir:

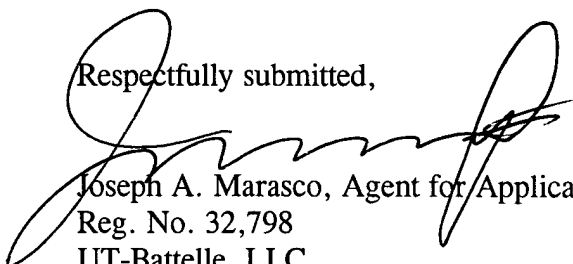
Submitted herewith on Form PTO-1449 is a listing of documents known to applicant in order to comply with applicant's duty of disclosure pursuant to 37 C.F.R. § 1.56. A copy of each document is being submitted herewith to comply with the provisions of 37 C.F.R. §§ 1.97 and 1.98.

Applicant presents these references that the Patent Office may determine any relevancy thereof to the presently claimed invention.

Applicant respectfully requests that the references be expressly considered during the prosecution of the subject application and made of record therein and appear among the "references cited" on any patent to issue therefrom.

Applicant also requests that an initialed copy of Form PTO-1449 be returned in accordance with MPEP Section 609.

Respectfully submitted,

  
Joseph A. Marasco, Agent for Applicants  
Reg. No. 32,798  
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**INFORMATION DISCLOSURE  
STATEMENT BY APPLICANT**

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**Complete if Known**

Sheet 1 of 5

Application Number	
Filing Date	
First Named Inventor	D. E. Hill et al
Art Unit	
Examiner Name	
Attorney Docket Number	1266, 1

U. S. PATENT DOCUMENTS					
Examiner Initials*	Cite No. <sup>1</sup>	Document Number	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Number-Kind Code <sup>2</sup> (if known)			
	1	US- 4,089,209	5/16/1978	Grana et al	
	2	US- 4,500,641	2/19/1985	van den Engh et al	
	3	US- 4,549,427	10/29/1985	Kolesar, Jr.	
	4	US- 4,752,226	6/21/1988	Akers et al	
	5	US- 4,768,390	9/06/2988	Baker et al	
	6	US- 4,906,440	3/06/1990	Kolesar, Jr.	
	7	US- 4,942,303	7/17/1990	Kolber et al	
	8	US- 5,014,225	5/07/1991	Vidaver et al	
	9	US- 5,532,679	7/02/1996	Baxter, Jr.	
	10	US- 5,654,692	8/05/1997	Baxter, Jr. et al	
	11	US- 5,866,430	2/02/1999	Grow	
	12	US- 5,922,183	7/13/1999	Rauh	
	13	US- 5,965,882	10/12/1999	Megerle et al	
	14	US- 6,083,740	7/04/2000	Kodo et al	
	15	US- 6,119,630	9/19/2000	Lobsiger et al	
	16	US- 6,119,976	9/19/2000	Rogers	
	17	US- 6,121,053	9/19/2000	Kolber et al	
	18	US- 6,316,268 B1	11/13/2001	Yang et al	
	19	US- 6,402,031 B1	6/11/2002	Hall	

FOREIGN PATENT DOCUMENTS						
Examiner Initials*	Cite No. <sup>1</sup>	Foreign Patent Document	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages Or Relevant Figures Appear	T <sup>6</sup>
		Country Code <sup>3</sup> -Number <sup>4</sup> -Kind Code <sup>5</sup> (if known)				

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This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND

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Sheet	2	of	5												

## U. S. PATENT DOCUMENTS

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		Country Code <sup>3</sup> *Number <sup>4</sup> *Kind Code <sup>5</sup> (if known)	MM-DD-YYYY			
	26	DD 248433A1	08/05/1987	Reinhold Koepp		
	27	EP 0811842A1	12/10/1997	Jean-Marie Ory		
	28	WO 99/32876	07/01/1999	Alfredo Lucia		
	29	DE 19857792A1	07/20/2000	U. Schreiber		
	30	CA 2,265,304	03/15/1999	S. Hunt et al		
	31	DE 41 40 414 A1	06/09/1993			

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Examiner Name			
Sheet	3	of	5
Attorney Docket Number		1266.1	

**NON PATENT LITERATURE DOCUMENTS**

Examiner Initials*	Cite No. <sup>1</sup>	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T <sup>2</sup>
	32	G.H.KRAUSE, et al "Chlorophyll Fluorescence & Photosynthesis: The Basics," Annu. Rev. Plant Physiol. Plant Mol. Biol. (1991) V. 42, p. 313-49	
	33	G.H.KRAUSE, et al "Photoinduced Quenching of Chlorophyll Fluorescence in Intact Chloroplasts & Algae," Biochimica et Biophysica Acta, V. 679, p. 116-124 (1982)	
	34	U.SCHREIBER et al "Chlorophyll Fluorescence as a Noninvasive Indicator for Rapid Assessment of In Vivo Photosynthesis," Ecological Studies, 100, p. 49-70 (1994)	
	35	BERNARD GENTY et al "The Relationship Between the Quantum Yield of Photosynthetic Electron Transport & Quenching of Chlorophyll Fluorescence," Biochimica et Biophysica Acta, 990, p. 87-92 (1989)	
	36	O.VAN KOOTEN et al "The Use of Chlorophyll Fluorescence Nomenclature in Plant Stress Physiology," Photosynthesis Research, 15, p. 147-150 (1990)	
	37	G.E.EDWARDS et al "Can CO2 Assimilation in Maize Leaves be Predicted Accurately from Chlorophyll Fluorescence Analysis," Photosynthesis Res., 37, p. 89-102 (1993)	
	38	G.G.R.SEATON et al "Chlorophyll Fluorescence as a Measure of Photosynthetic Carbon Assimilation, Proc.R.Soc.London Ser. B, 242, p. 17-108 (1995)	
	39	MARTINE NAESSENS et al "Fiber Optic Biosensor Using Chlorella Vulgaris for Determination of Toxic Compounds," Ecotoxicology and Env. Safety, 46, p. 181-185 (2000)	
	40	HEINZ WALZ, "Internet Web Site <a href="http://www.walz.com">http://www.walz.com</a> eg, <a href="http://www.walz.com/xepam.htm">http://www.walz.com/xepam.htm</a> & <a href="http://www.walz.com/pamzta.htm">http://www.walz.com/pamzta.htm</a> "	
	41	G.DUBELAAR et al "Design & First Results of CytoBuoy: A Wireless Flow Cytometer for In Situ Analysis of Marine & Fresh Waters," Cytometer 37, p. 247-254 (1999)	

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	42	R.K.GELDA et al "Estimating Oxygen Exchange Across the Air-Water Interface of a Hyperautrophic Lake," Hydrobiologia, 487, p. 243-254 (2002)	
	43	M.RODRIGUEZ,Jr. et al "Biosensors for Rapid Monitoring of Primary-Source Drinking Water Using Naturally Occurring Photosynthesis," Biosensors & Bioelectronics 17, p.843-849 (2002)	
	44	A.PINTO et al "Chlorophyll-A Determination via Continuous Measurement of Plankton Fluorescence:Methodology Development" Wat. Res. Vol. 35, No. 16, p.3977-3981 (2001)	
	45	C.A.SANDERS et al "Stand-off Tissue-Based Biosensors for the Detection of Chemical Warfare Agents using Photosynthetic Fluorescence Induction," Biosensors & Bioelectronics 16 p. 439-446 (2001)	
	46	K.WILD-ALLEN et al "Observations of Diffuse Upwelling Irradiance & chlorophyll in Case I Waters Near the Canary Islands (Spain)"Optics & Laser Technology, V29, No. 1 P. 3-8 (1997)	
	47	T.MOORE et al "Real-Time River Level Monitoring Using GPS Heighting," GPS Solutions, V.4, No. 2, p. 63-67 (2000)	
	48	D.LAPOTA et al "Development of an Autonomous Bioluminescence Buoy (BioBuoy) for Long-Term Ocean Measurements," SPAWAR Systems Center	
	49	U.A.KORDE, "A Note on the Hydrodynamics of a Tail Tube Buoy," Ocean Engineering 27, p. 1473-1484 (2000)	
	50	M.KISHINO et al "Verification Plan of Ocean Color & Temperature Scanner Atmospheric Correction of Phytoplankton Pigment by Moored Optical Buoy System" J. of Geo. Res., V102, D14, p.17,187-17,207 (1997)	
	51	Drinking Water Standards and Health Advisories, Office of Water U. S. Envrionmental Protection Agency, Washington D.C. (2000)	

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	52	J.W.KLETT et al, "Flexible Towpreg for the Fabrication of High Thermal Conductivity Carbon/Carbon Composites," Carbon, V.33, No. 10, p. 1485-1503 (1995)	
	53	Guidelines for Chemical Warfare Agents in Military Field Drinking Water, National Academy Press, Washington, D.C. (1995)	

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